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SURGE IS REPORTED IN ESPIONAGE CASES

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Special to The New York Times

WASHINGTON, June 1 — Never before have so many people been awaiting trial on charges of espionage against the United States, Federal officials say.

Around the country, 11 people are accused of spying for the Soviet Union or its allies. Three of those people are members of the Walker family, charged last month in what some Federal officials call the most damaging spy case in recent times.

Federal Bureau of Investigation figures show that in the last four years, 11 other people have been charged with espionage and convicted. There were 46 people convicted of espionage or related crimes over the previous 40 years.

4 Million See 'Secret' Data

Federal officials say part of the reason for this sharp rise is increased enforcement, but intelligence officers and other Government officials also say the Soviet Union has more intelligence officers operating in the United States than ever.

Another important part of the problem, these officials said, is that the number of Americans approved to handle material classified as secret or top secret has risen beyond four million.

An official of the National Security Council said the Government estimates "there are approximately one-third more Soviet intelligence officers here now" than a decade ago. A senior intelligence official put the number at almost 1,000.

The Senate Select Committee on Intelligence concluded in a report last week that one-quarter of the 800 Russians assigned to the United Nations are "intelligence officers," and that many more are "co-opted" by the K.G.B. or other Soviet intelligence agencies.

Meanwhile, the number of Americans with access to secret and top secret material has grown by more than 50 percent in the last 10 years, while the number of classifed documents has grown dramatically, too. As of April 1, Defense Department statistics show, 4.3 million people had official Government clearance to handle materials in restricted categories.

More than 600,000 people in Government and in private industry may review top secret material, the most sensitive classification. More than 100,000 people are cleared to handle "sensitive compartmented information," a catagory of the most highly classified intelligence information.

Britt L. Snider, the Defense Department's Director of Counterintelligence and Security Policy, said, "The requests for clearances have been increasing like crazy the last couple of years."

Clearance Requests Doubled

The Defense Department processed 136,920 requests for security clearance in 1975. In 1984 there were 206,790, an increase of 50 percent. And with more than four million people now approved to handle secret and top secret documents, Mr. Snider added, "it does suggest that we have a greater vulnerability" to Soviet spies.

With the arrest of the three Walkers, members of Congress and others are focusing on these facts with renewed concern. John A. Walker Jr., his son Michael and his brother Arthur all had secret or top secret security clearances while serving in the Navy or afterward. All are accused of selling the Russians a wide range of highly sensitive naval information.

Nunn Asks Big Reduction

On Friday Senator Sam Nunn of Georgia, the senior Democrat on the Armed Services Committee, said the United States should halve the number of people approved to handle classified material. Also this week Patrick J. Leahy, the Vermont Democrat who is vice chairman of the Senate Intelligence Committee, said, "Soviet spying is a far greater problem today than we have acknowledged."

A senior intelligence official said Soviet intelligence officers work "in the Soviet Embassy, in the consulates, at the U.N."

"They work for Tass," the Soviet Government press agency, he added, for Aeroflot, the Soviet airline, "other businesses and under deep cover" not attached to a business or government office.

He and other intelligence officials said the estimate of almost 1,000 Soviet officers did not tell the entire story.

"It doesn't take into account the visiting delegations, the travelers and the co-opted people," said James J. Angleton, who was the Central Intelligence Agency's counterintelligence director until 1975.

Roy Godson, a professor at Georgetown University who teaches and writes about intelligence matters and serves as a consultant to the Government, said he had been told by several knowledgeable Russians that "Soviet citizens who visit the United States have to sign a paper saying they will serve their Government if asked." He added that this did not necessarily mean all the visitors were asked to serve as spies.

"But when they need someone to serve as a drop" or as a courier, Professor Godson said, "they might use one of these people. That complicates counterintelligence for us tremendously because we don't have enough resources to watch all of them."

Most of the Soviet intelligence officials work as case officers, United States officials said. That means they may do little spying themselves, but they manage Americans who have access to sensitive material and are being paid or otherwise influenced to work for the Russians.

John Walker is accused of working as an agent for a Soviet case officer identified in a Government affidavit as a vice consul at the Soviet Embassy here. Federal officials say the Soviet officer left the country almost immediately after Mr. Walker was charged with espionage.

Intelligence officials say each Soviet case officer can probably manage no more than five American agents at a time. Directing agents is complicated and time-consuming, they say. That means, the officials went on, that the Russians could be working with as many as several hundred Americans as spies, although it is unlikely that every Soviet case officer has a full complement of American agents.

Arrests Aren't the Whole Story

Mr. Godson said: "They have a large number of people, and we don't seem to be catching very many of them, which makes us wonder: What are the others doing?"

American officials say the number of arrests does not tell the whole story since many people caught spying are never prosecuted. Every time a spy is caught, they said, the damage can be compounded if the seriousness of his disclosures becomes publicly known.

"It's one thing for the Soviets to get our secrets," an intelligence official said, "but it's even worse when they can find out from us exactly how valuable what they got really was." So in many cases, he and other officials said, national security dictates that the spy not be put to a public trial.

When they can, intelligence officials

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said, they try to coerce a spy suspect to work for the United States; in essence, they try to turn him into a double agent who can then pass information back to his Soviet case officer that is mostly false. "It's a huge, messy, time-consuming business," an intelligence official said. "Some of them are hopeless, and we don't even try."

But when an American can be turned into a double agent, that has the additional advantage of tying up much of the Soviet case officer's time on a useless agent, the officials said.

Government officials and others offer a number of explanations for the apparent dramatic increase in spying in the last decade. In the détente years of the 1970's, "we opened up the country to a very substantial inflow of possible intelligence operatives," said Bobby R. Inman, former Deputy Director of Central Intelligence.

At the same time, Mr. Inman and others added, throughout the 1970's the United States cut back the money and manpower devoted to counterintelligence because of budgetary constraints and public accusations of mismanagement and abuse in the American intelligence community.

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THE "STAR WARS" DEFENSE WON'T COMPUTE

The software problems posed by missile defense are too great for the existing computer capability

THE PENTAGON'S plans for the 1990s evoke a science-fiction film festival: robot tanks prowl battlefields, silicon co-pilots ride shotgun in dogfights, and computers scan the skies, poised to fire anti-missile missiles without human guidance or decision. The Pentagon wants "brilliant" (that is, smarter than smart) computer programs for battlefield and strategic weapons. Defense planners hope to open a new round in the arms race, one the United States can't lose. Some visionaries believe that computer science now stands at a threshold very like the one crossed by nuclear physics around 1940. They expect that in future battles the computer itself will become the most important weapon in the arsenal, while the platforms that carry it (tanks, ships, and drone aircraft) and the munitions that it discharges (conventional or nuclear) will be relegated to the status of mere accessories.

The hardware projects are ambitious, but far more so are the plans to create software—the programs, or lists of instructions, that tell the computers what to do. The Pentagon is planning the largest programs ever conceived, containing millions of instructions. Not only will these programs be larger than any now in existence but they are supposed to transcend the rigid routines of today's programs and attain a flexibility approaching human thought. Computers with these characteristics represent the yet-to-appear "fifth generation" of computer technology—they exhibit "artificial intelligence."

The technologies involved in these computers do not yet exist, and whether or not they ever will is controversial. Yet they are vital to the success of several costly weapons programs, most notably the $26 billion Strategic Defense Initiative (SDI), better known as the Star Wars missile defense. Robert Cooper, the head of the Defense Advanced Research Projects Agency (DARPA), the Pentagon's main agency for basic research, promises that the new computers will be "an enabling technology for a defense as complex as may be necessary for ballistic missile defense." Many computer scientists are skeptical, however. They think that we are betting the security of the country on hypothetical discoveries that may never occur. The Pentagon alludes to these as basic research projects, not applied research to develop weapons for the field. But we are already concentrating our research resources on them and are therefore abandoning alternatives. In the future we may find that we have become committed by default and that we have to use the results of these projects, no matter how far short of today's promises they may fall.

The Department of Defense (DoD) is now subordinating computer science to military needs as completely as nuclear physics, aeronautics, and rocketry were subordinated in the 1940s. An unprecedented flow of DoD dollars is intended, in the Pentagon's words, to "push" and "pull" the nation's computer scientists into working on "carefully selected military applications." At a time when Japan is funding an effort of similar scope to dominate the commercial computer market (about which more later), the wisdom of militarizing computer science is doubtful. The Pentagon admits that "the magnitude of this national effort could represent a very large perturbation to the university community"; nonetheless, there has been little opposition from computer scientists. A few hope for a Pax Americana guaranteed by uncontested technological prowess rather than by the traditional sorts of military power. Others are skeptical, but most are indifferent to the political implications of the bottomless well of defense-contract money for their research projects and businesses.

So the work begins. An aura of naive overconfidence hangs over much of the effort. The proposals and progress reports suggest attitudes shaped in seminars on the campus of a suburban defense think tank, not on the battlefield or training ground. They reveal a fascination with abstruse theory and a delight in virtuoso puzzle-solving coupled with a nonchalance toward practical problems and a flip disregard for safety and reliability. While DoD is attempting to persuade the public that infallible robot warriors will remove the risk and uncertainty from combat and permit Americans to wage wars without casualties, the race to close the incipient robot gap is already on. At a Moscow trade fair last fall the Moscow Academy of Sciences announced a five-year, $100 million program by Soviet and Warsaw Pact scientists to develop fifth-generation computer technologies for the Eastern bloc.

FIFTH-GENERATION computing technology is slated for application in many DoD programs, but the most extreme examples occur in something called the Strategic Computing Program (SCP). This five-year, $600 million project was announced in October of 1983 by DARPA, and it got under way last year, with a first-year budget of $50 million.

The central goal of the project is to apply a family of programming techniques called "artificial intelligence" to a new generation of brilliant weapons that would be able to perform complex missions without human guidance. It is described in the DARPA report *Strategic Computing, New-Generation Computing Technology: A Strategic Plan for Its Development and Application to Critical Problems in Defense*. If the goal is even partially achieved, future historians might rank this remarkable document with Albert Einstein's 1939 letter to President Roosevelt recommending development of the atomic bomb. Its peculiar tone, at once extravagant and vague, is difficult to convey in paraphrase. It begins:

> Instead of fielding simple guided missiles or remotely piloted vehicles, we might launch completely autonomous land, sea, and air vehicles capable of complex, far-ranging reconnaissance and attack missions. . . . In contrast with previous computers, the new generation will exhibit human-like, "intelligent" capabilities for planning and reasoning. . . . Using this new

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